

Artificial Intelligence Applied to Battery Research: Hype or Reality?

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Abstract

This is a critical review of artificial intelligence/machine learning (AI/ML) methods applied to battery research. It aims at providing a comprehensive, authoritative, and critical, yet easily understandable, review of general interest to the battery community. It addresses the concepts, approaches, tools, outcomes, and challenges of using AI/ML as an accelerator for the design and optimization of the next generation of batteries—a current hot topic. It intends to create both accessibility of these tools to the chemistry and electrochemical energy sciences communities and completeness in terms of the different battery R&D aspects covered.